




SAFETY DATA SHEET

MATERION

1. Identification

Product identifier	Zinc Sulfide
Other means of identification	
SDS number	Z-MSDS0009
Synonyms	Zinc sulphide
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer	
Company name	Materion Advanced Chemicals Inc.
Address	407 N 13th Street 1316 W. St. Paul Avenue Milwaukee, WI 53233 United States
Telephone	414.212.0257
E-mail	advancedmaterials@materion.com
Contact person	Noreen Atkinson
Emergency phone number	Chemtrec 800.424.9300

2. Hazard(s) identification

Emergency overview	WARNING Flammable Solid. Combustible. May be harmful in contact with skin. Exposure to powder or dusts may be irritating to eyes, nose and throat. Dangerous for the environment if discharged into watercourses. Health injuries are not known or expected under normal use.
Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Signal word	Warning
Hazard statement	May be harmful in contact with skin. Very toxic to aquatic life.
Precautionary statement	
Prevention	Avoid release to the environment.
Response	Collect spillage. Call a poison center/doctor.
Storage	Not available.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Zinc sulfide	Zinc sulphide	1314-98-3	100

CLP: Regulation No. 1272/2008.

DSD: Directive 67/548/EEC.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. #: This substance has been assigned Community workplace exposure limit(s).

4. First-aid measures

Inhalation	If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Rinse with water. Call a POISON CENTER or doctor/physician if you feel unwell.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
Most important symptoms/effects, acute and delayed	Not available.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Treat symptomatically. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Water.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Not applicable.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. In the event of fire, cool tanks with water spray. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Water runoff can cause environmental damage.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Local authorities should be advised if significant spillages cannot be contained. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust from the spilled material. Ventilate closed spaces before entering them.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. Collect spillage. Dike far ahead of spill for later disposal. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid the generation of dusts during clean-up. Prevent product from entering drains. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Avoid dust formation. Guard against dust accumulation of this material. Provide appropriate exhaust ventilation at places where dust is formed. All equipment used when handling the product must be grounded. Do not breathe dust from this material. Avoid contact with skin and eyes. Avoid prolonged exposure. In case of insufficient ventilation, wear suitable respiratory equipment. Practice good housekeeping. Wash contaminated clothing before reuse. Handle and open container with care. Avoid release to the environment. Do not empty into drains.
Conditions for safe storage, including any incompatibilities	The pressure in sealed containers can increase under the influence of heat. Keep away from heat and sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Avoid dust formation. Guard against dust accumulation of this material. Keep out of the reach of children. Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Control parameters	Follow standard monitoring procedures.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear eye/face protection. Use tight fitting goggles if dust is generated. Eye wash fountain is recommended.
Skin protection	
Hand protection	Not normally needed.
Other	Wear suitable protective clothing. Wear protective gloves.
Respiratory protection	Wear respirator with dust filter. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Not available.
Exposure guidelines	No exposure standards allocated.
General hygiene considerations	When using do not smoke. Do not breathe dust. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Powder.
Physical state	Solid.
Form	Solid. Powder
Color	Not available.
Odor	Not applicable.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	3092 °F (1700 °C)
Initial boiling point and boiling range	Not applicable.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Flammable solid.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0.0000001 kPa at 25 °C
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	3.99 g/cm ³ 4.10 g/cm ³
Molecular formula	S-Zn
Molecular weight	97.46 g/mol
Specific gravity	3.99 4.1

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid spread of dust. Heat, flames and sparks.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	May be harmful in contact with skin.
Eye contact	Due to lack of data the classification is not possible.
Ingestion	Based on available data, the classification criteria are not met.

Symptoms related to the physical, chemical and toxicological characteristics Not available.

Information on toxicological effects

Acute toxicity May be harmful in contact with skin.

Product	Species	Test Results
Zinc Sulfide (CAS 1314-98-3)		
Acute		
Dermal		
LD50	Rat	> 2 g/kg
Oral		
LD50	Rat	> 15000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Due to lack of data the classification is not possible.

Serious eye damage/eye irritation Dust in the eyes will cause irritation.

Respiratory or skin sensitization

Respiratory sensitization Due to lack of data the classification is not possible.

Skin sensitization Due to lack of data the classification is not possible.

Germ cell mutagenicity Due to lack of data the classification is not possible.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity Due to lack of data the classification is not possible.

Specific target organ toxicity - single exposure Due to lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure Due to lack of data the classification is not possible.

Aspiration hazard Due to lack of data the classification is not possible.

Chronic effects Prolonged inhalation may be harmful.

Further information This product has no known adverse effect on human health.

12. Ecological information

Ecotoxicity Very toxic to aquatic life.

Product	Species	Test Results
Zinc sulfide (CAS 1314-98-3)		
Aquatic		
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>) 1826 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	Not available.
Mobility in soil	Not available.
Other adverse effects	Not available.

13. Disposal considerations

Disposal instructions	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of contents/container (in accordance with related regulations). Collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. Regulatory information

US federal regulations	CERCLA/SARA Hazardous Substances - Not applicable.
	All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)	Not regulated.
CERCLA Hazardous Substance List (40 CFR 302.4)	Zinc sulfide (CAS 1314-98-3) Listed.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	Not listed.
SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Zinc sulfide	1314-98-3	100

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)	Priority pollutant Toxic pollutant
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Safe Drinking Water Act (SDWA)	Not regulated.
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US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - New Jersey RTK - Substances: Listed substance

Zinc sulfide (CAS 1314-98-3)

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Zinc sulfide (CAS 1314-98-3)

US. Pennsylvania RTK - Hazardous Substances

Not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Zinc sulfide (CAS 1314-98-3)

US. California Proposition 65

Not Listed.

16. Other information, including date of preparation or last revision

Issue date	05-22-2015
Revision date	07-08-2016
Version #	04

Further information

Emergency telephone numbers

Austria - VergiftungsInformationsZentrale, +431.406.43.43

Belgium - Centre Antipoisons - +070.245.245

Bulgaria - Телефон за спешни случаи / факс, +359.2.9154.409

Cyprus - +357.22405611

Czech Republic - Toxikologické informační středisko, +420.224.919.293

Denmark - Akuthjælp ved forgiftning, +82.12.12.12

Estonia - Mürgistusteabekeskuse, 16662

Finland - Myrkytystietokeskus, +(0)9.471.977

France - numéro ORFILA, +33.(0)1.45.42.59.59

Germany - GIZ-Nord Poisons Centre, +49.(0)551.383.1876

Greece - +30.210.64.79.286

Hungary - Az Egészségügyi Toxikológiai Tájékoztató Szolgálat, +36 1 476 6464

Iceland - +354.591.2000

Ireland - National Poisons Information Centre - +353.01.8092566

Italy - Istituto Superiore di Sanità, 064990.2423

Latvia - Valsts Toksikoloģijas centra Saindēšanās un zāļu informācijas centrs, +371.67042473

Liechtenstein - +423.236.61.95

Lithuania - Neatidėliotina informacija apsinuodijus, +370 5 236 20 52

Luxembourg - +352 42 59 91 600

Malta - 2545 0000

Netherlands - NVIC, 030-2748888

Norway - Giftinformasjonen, 22.59.13.00

Poland - Biuro ds. Substancji Chemicznych, +48 42 2538 424

Portugal - 808.250.143

Romania - Biroul RSI si Informare Toxicologica, 021.318.36.06

Slovakia - NTIC, +421.2.5477.4166

Slovenia - Kemična urad Republike Slovenije + 386.14.00.60.51

Spain - Servicio de Información Toxicológica, + 34.91.562.04.20

Sweden - 112

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References

ACGIH
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)
Korea. Non-Toxic Chemicals List (National Institute of Environment Research (NIER) Public Notice No. 1997-10, as amended)
Korea. Observational Chemicals (Ministerial Decree of TCCL Article 6)
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)
Korea. Prohibited Chemical Substances (TCCL Article 11)
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)
Korea. Restricted Chemical Substances (TCCL Article 11)
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List
Korea. Toxic Chemicals (TCCL Article 10)
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)
Taiwan. Dangerous Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
Taiwan. Industrial Precursor Chemicals (Categories and Regulations Governing Inspection and Declaration of Industrial Precursor Chemicals, MOEA Decree No. 87, as amended)
Taiwan. OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)
Taiwan. Toxic Chemical Substances (TCS) (List of Toxic Chemical Substances announced by the Environmental Protection Administration)
Taiwan. Toxic Materials (Rules on Hazard Communication of Dangerous Materials and Toxic Materials)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
JIS Z 7250: 2010 Safety data sheet for chemical products-Content and order of sections
JIS Z 7251: 2010 Labeling of chemicals based on GHS

Disclaimer

Additional information is given in the Material Safety Data Sheet.

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